342 to insure our houses against some sort of damage from aerolites.

The manner of building used today in Turkestan obviously dates back to very ancient times, and one can assume, with certainty, that the houses here have never been built in any other way than they are at present. The loess earth which is available in abundance at every building site is such a tractable and useful material, and the buildings constructed with it are so solid and relatively long lasting thanks to the extraordinary dryness of the climate, that the inhabitants have never had occasion to look around for another material. The lack of firewood does not permit the use of firebricks for the building of private houses, for /235/ Figure 86. Caption: A View of Khiva from the West./ /236/ there are no woods in the oases of Turkestan and only reeds and the wood of garden trees can be used for burning material. Two important circumstances stand in the way of using stones for house construction. First of all, walls erected from unhewn stones can withstand earthquakes much less successfully than clay walls; secondly, there are no stones at all in loess regions, and they would have to be collected from the mountains, hundreds of kilometers away, which in the absence of highways and bridges is absolutely unthinkable. It can be clearly concluded from the history of Alexander the Great, that already in his time the houses and town walls were erected in the same way as today. Arrian writes that the town walls of Ghaz (probably the modern Nau, as I have deduced in my monograph Alexanders des grossen Feldzüge in Turkestan /The Campaigns of Alexander the Great in Turkestan/) were built of earth and were not high.

> /He reports further that Alexander had the town of Alexandria on the Tanais, the present-day Khodzhent /Leninabad/ built in 20 days, with town walls and houses. Curtius has reduced this to 17 days. This would only have been possible if Alexander had built the town in the way that the Khodzhent of today and the other towns of Turkestan are still being built. --Translator/

342 It can be concluded, that the towns of Turkestan were built in
172 the manner still used today even during the periods of glory under the rule of the Arabs and the Timurides, from the fact that no remnants of masonry erected of stone or firebricks have been found in any great volume. All the town ruins still in existence prove that everywhere only public buildings were built of firebricks, and even this was only since the time of the Arabs; on the other hand, except for the splendid

342 Tamerlane buildings in Samarkand, one finds not a trace of stone buildings
172 in the plains. These are found only in mountain regions, in the Darvaz and Badakhshan ranges and the like, where even today in some places the houses are erected of unhewn stones, for the simple reason that there is no loess there and the climate is damper than in the lowlands.

In prehistoric times the inhabitants of Turkestan must have lived in artificial underground caves and passages made in the loess ground; this is demonstrated among other things by the passages and holes found in Samarkand and lately also near Karti on the Amu-Darya. These are extensive and form unmistakable underground towns.

354 The interior arrangement of the dwellings is just as simple as the dwellings themselves. There are no stoves anywhere; instead, usually, I have found a 'kamin' /fire place/ in Afghan Turkestan and among the Taranchis of the Ili valley. /237/ which are completely similar to those used by us. Real heating of the living rooms would not be possible in any case even with a stove, because the doors close only very imperfectly, and are even completely lacking among the poorer people, and because the window openings, when there are any are either quite open or most often pasted over with thin paper. Glass windows are not used by the natives, and both the very rich people and the khans themselves pass the cold season of the year in unheated rooms into which the air enters freely. The felt yurts /tents/ of the nomads offer much better protection in winter against the cold and inclement weather than the dwellings of even the richest of the sedentary population. The Kazakhs are therefore perfectly right in preferring their yurts to the walled dwelling houses.

In order to keep warm during the bitterest cold the natives of Turkestan use wrought-iron braziers, resting on four legs, like those in use in ancient times in Greece and Rome. /Figure 87, p. 69a. Caption: Brazier of Turkestan./ This brazier, after it is filled with glowing embers, is placed under a small table, round or square, twenty to forty centimeters in height, which is then covered with a large quilted cotton coverlit. The members of the family now seat themselves on the floor around this little table and stretch their hands and feet out under the coverlet in the space warmed by the coals. In Figure 87 there is such a brazier drawn from life, shown with the tongs and coal shovel which belong to it.

For the poor people who cannot afford the luxury of a brazier, there is nothing left but to freeze and sometimes to freeze to death, par-

492 133 to Kashgar. Only Bactrian camels, very heavy double-humped animals, whose thick coat of hair protects them against the snow-storms and the bitter cold, are strong enough to carry burdens of merchandise through this waterless and treeless country. The temperature [132] varies between + 35° centigrade in the summer and — 25° in the winter.

172 133 487 It is probable that conditions were not always so unfavourable. The ruins of richly adorned Buddhist temples and monasteries excavated by Sir Aurel Stein, Albert von Grünwedel, and Albert Le Coq, and an astonishingly large number of frescoes, sculptures, fabrics, and documents discovered by these scholars bear witness to this fact. The so-called silk-roads which passed these monasteries were

1/K [In Eastern Turkestan --Analyst]

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4:Leix U-5 (no date)1941 RL1 Turkestan RL1

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[172]
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the trade-routes between China and the West. In ancient and medieval times they were numbered among the busiest caravan-routes in the world (see Ciba Review No. 10, page 316). Silks, brocades, precious stones, Chinese porcelain, metal and glass goods of enormous value were transported by these roads. Nevertheless Marco Polo's report shows that even in his day, that is to say towards the end of the thirteenth century, the population must have been very small, and that the water-works were falling into decay. It is very probable that the Mohammedan invasion which destroyed the Buddhist civilization of Eastern Turkestan was not entirely responsible for this decline; a general change of climatic conditions must be presumed to have taken place. In Marco Polo's